

# **REPORT ON REGIONAL AIR QUALITY**

*January 29, 2015*

*Air Quality Planning and  
Science Division*

# **Presentation Outline**

- **Air Quality Successes and Challenges**
  - **Ozone**
  - **PM2.5**
- **U.S. EPA's Upcoming Revision to Ozone Standard**

# **Current Air Quality**

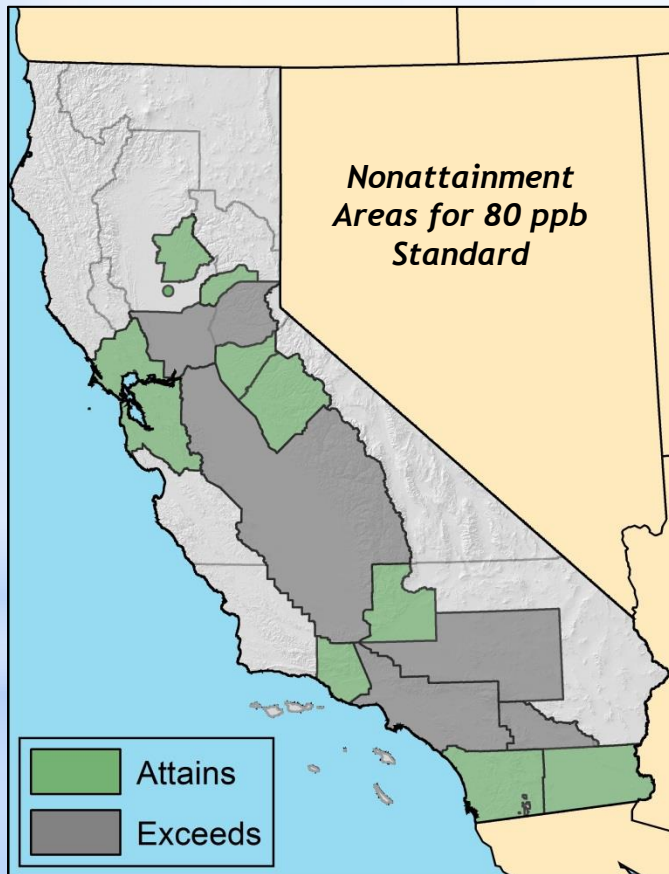
- **CO, NO<sub>2</sub>, and SO<sub>2</sub> standards attained statewide**
- **Lead standard attained statewide with exception of Los Angeles County**
- **Attainment of ozone and PM<sub>2.5</sub> standards remains greatest challenge**

# Addressing Multiple Standards

- Characterize progress achieved through implementation of current SIPs
  - 80 ppb 8-hour ozone standard
  - 15  $\mu\text{g}/\text{m}^3$  annual PM<sub>2.5</sub> standard
  - 35  $\mu\text{g}/\text{m}^3$  24-hour PM<sub>2.5</sub> standard
- Frame planning needs for upcoming SIPs
  - 75 ppb 8-hour ozone standard
  - 12  $\mu\text{g}/\text{m}^3$  annual PM<sub>2.5</sub> standard

# **AIR QUALITY SUCCESSES AND CHALLENGES: OZONE**

# Success in Meeting 80 ppb Ozone Standard

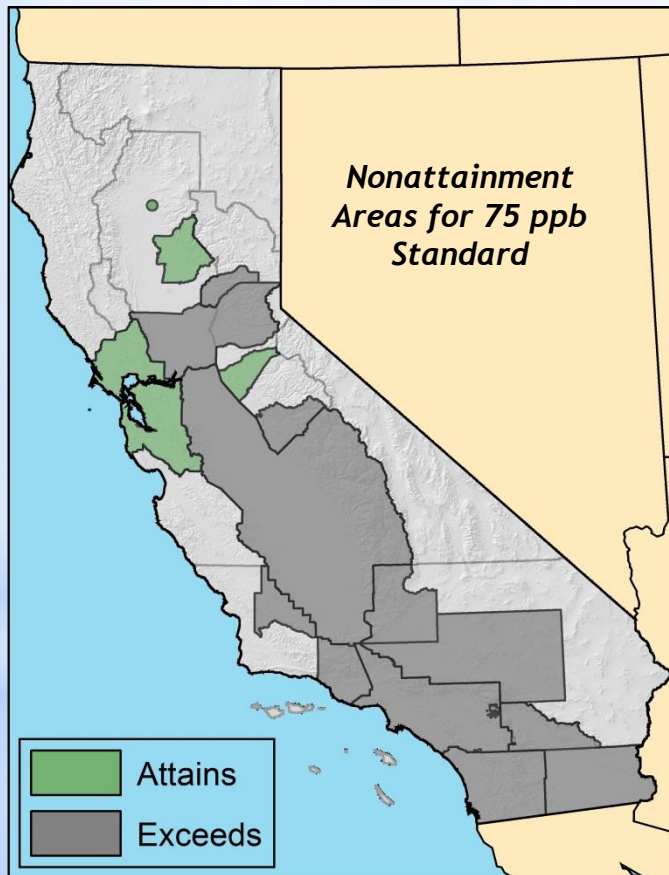


- 10 of the 15 nonattainment areas now meet the standard
- Sacramento expected to attain in 2015
- Design values in remaining areas have decreased up to 45%
- 81% of Californians live in areas that meet 80 ppb standard

# **Remaining Challenges: 80 ppb Ozone Standard**

- **Remaining nonattainment areas include Coachella, Mojave Desert, South Coast, and San Joaquin Valley**
- **Attainment in downwind areas of Coachella and Mojave Desert is linked to South Coast**
- **On-going reductions still needed in South Coast and San Joaquin Valley to meet 2023 attainment date**

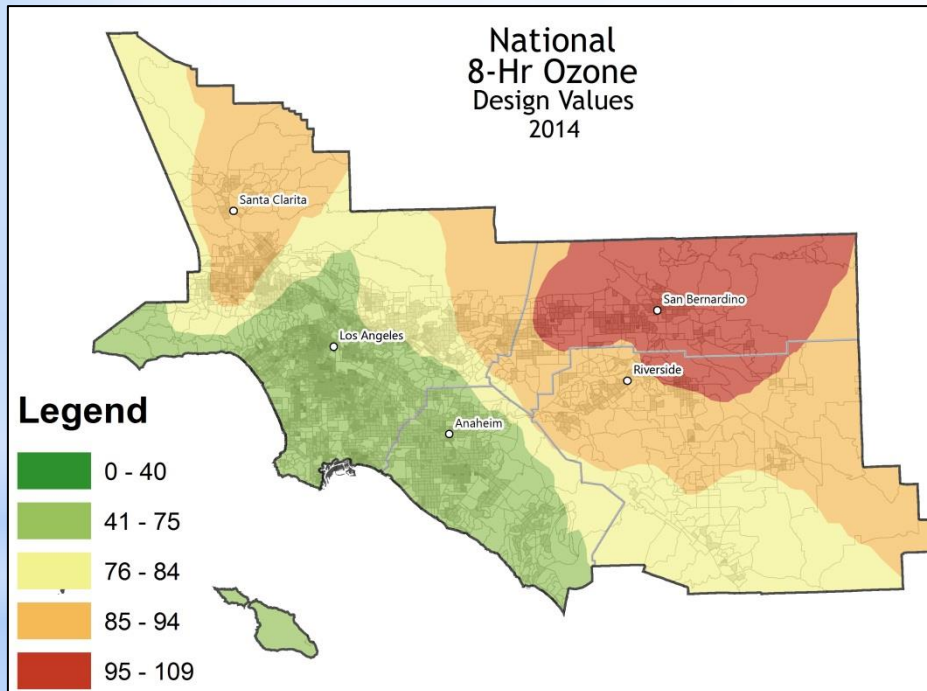
# Planning for 75 ppb Ozone Standard



- SIPs due in 2016
- 4 of the 16 nonattainment areas already meet the standard
- Attainment dates range from 2015 to 2032, depending on air quality severity
- Differing challenges in South Coast and San Joaquin Valley require regional strategies



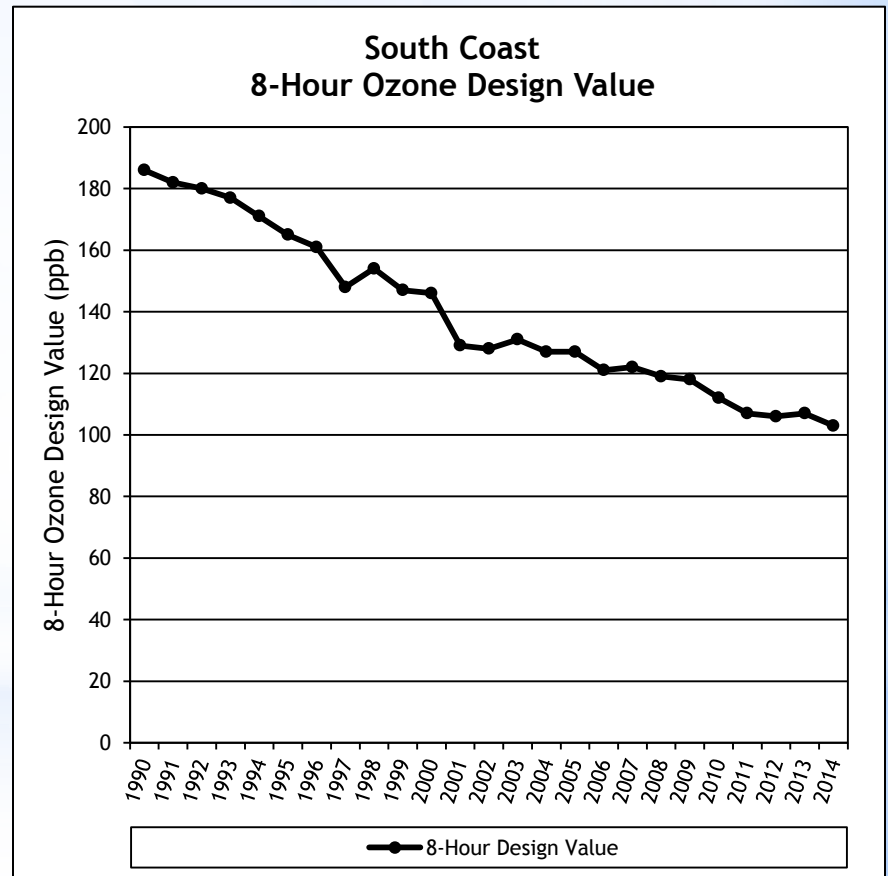
# Nature of Ozone Challenge in South Coast



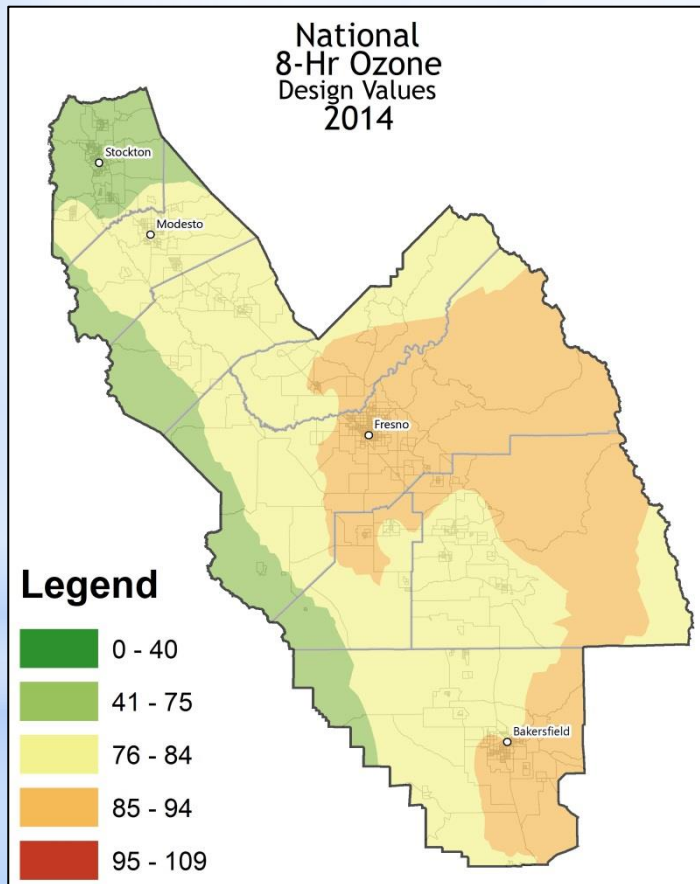
- Weather and topography result in large ozone gradients
- Significant portion of region meets 75 ppb standard
- Highest design values are nearly 30 ppb above the standard, with up to 70 exceedance days

# Nature of South Coast Control Strategy

- Past progress relied on reducing both ROG and NO<sub>x</sub> emissions
- Modeling shows future progress also dependent on both ROG and NO<sub>x</sub> reductions
- Strategy must address large inventory of anthropogenic ROG and NO<sub>x</sub> emissions



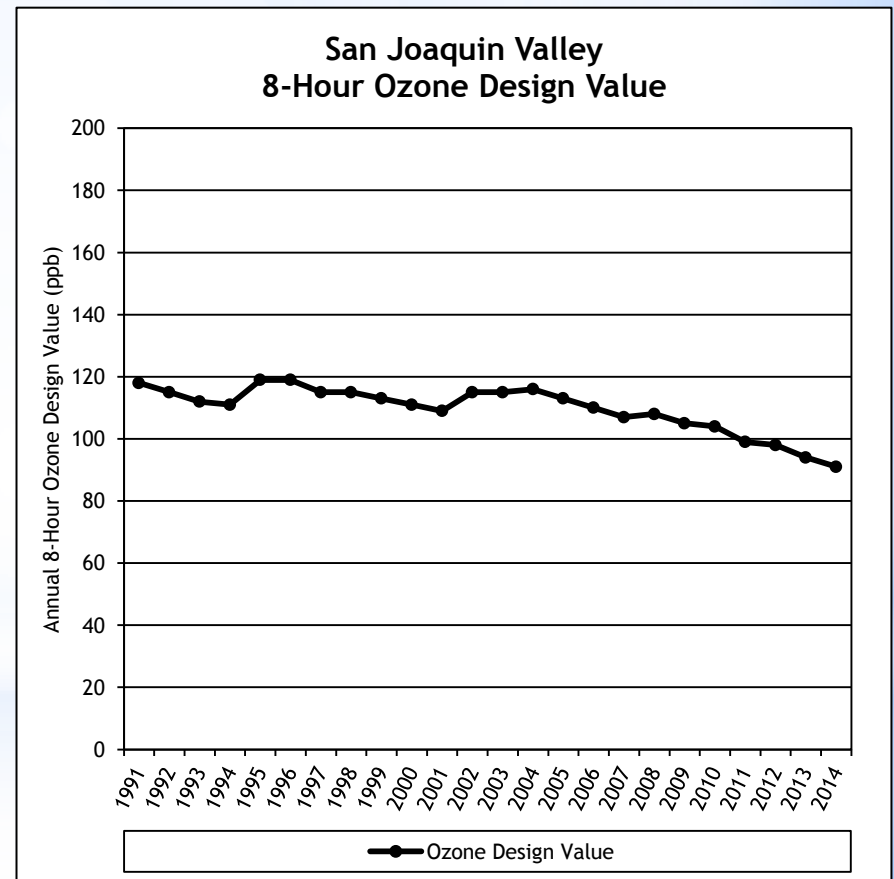
# Nature of Ozone Challenge in San Joaquin Valley



- Weather and topography result in ozone build-up throughout the Valley
- Only small portion of Valley currently meets 75 ppb standard
- Highest design values are about 20 ppb above the standard, with up to 55 exceedance days

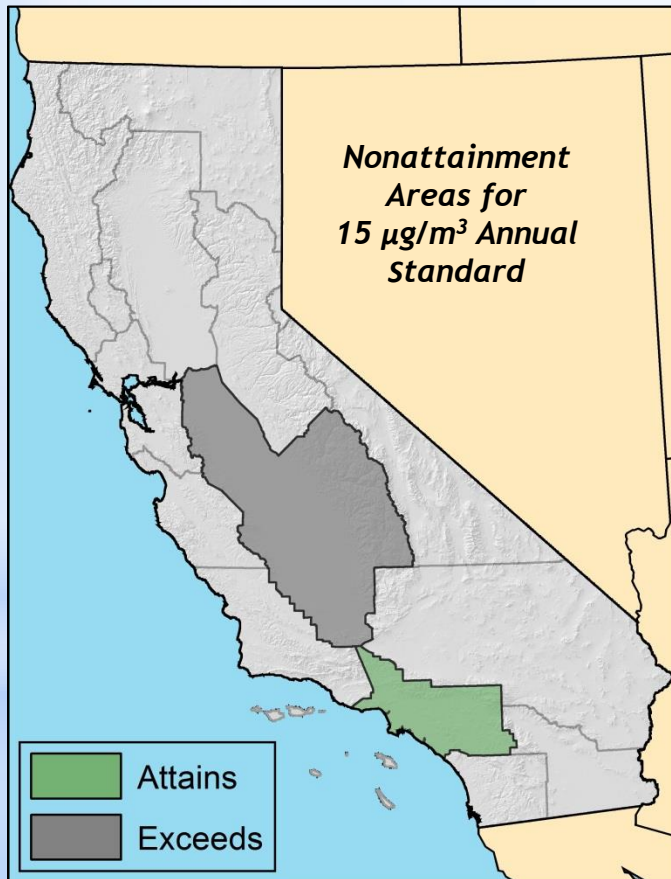
# Nature of San Joaquin Valley Control Strategy

- Progress increased over last decade, coincident with NO<sub>x</sub> reductions
- Modeling shows future ozone also most responsive to NO<sub>x</sub> reductions; ROG less effective
- ROG inventory dominated by emissions from natural sources



# **AIR QUALITY SUCCESSES AND CHALLENGES: PM2.5**

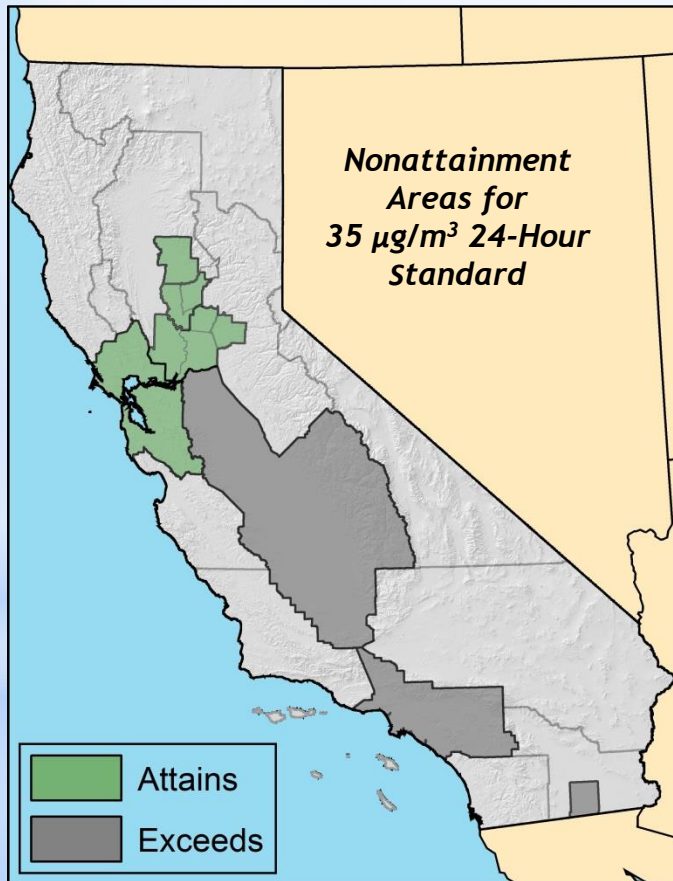
# Success in Meeting $15 \mu\text{g}/\text{m}^3$ Annual PM<sub>2.5</sub> Standard



- South Coast attained in 2013 with nearly 50% drop in design value over last decade
- San Joaquin Valley design value decreased 30% over last decade but remains over standard



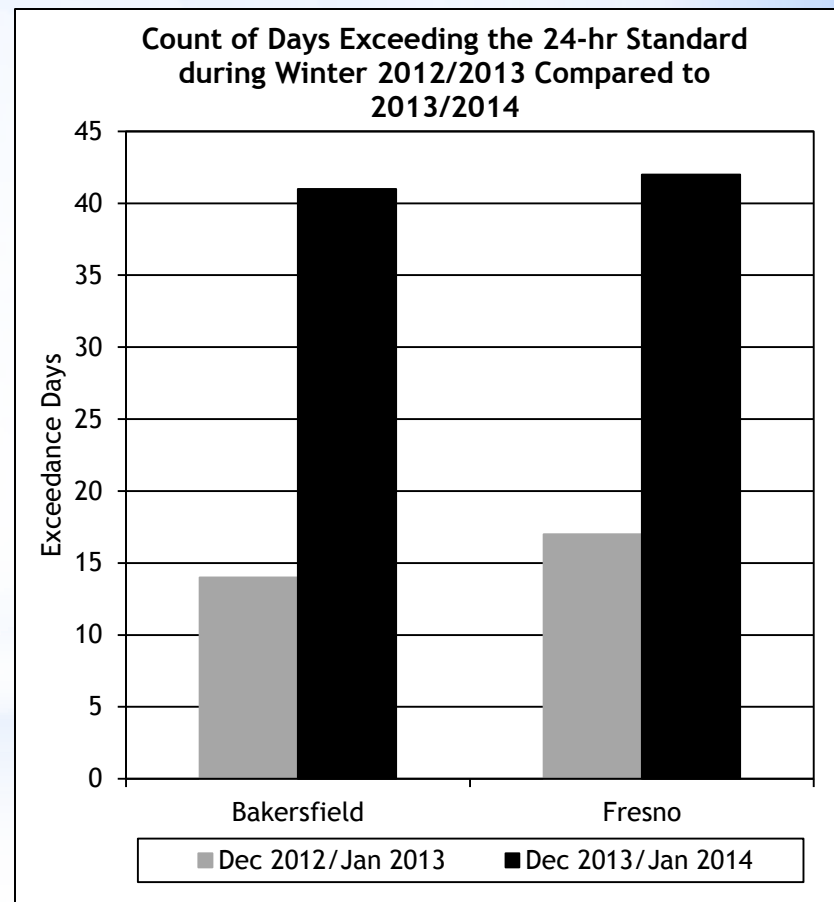
# Success in Meeting $35 \mu\text{g}/\text{m}^3$ 24-Hour PM<sub>2.5</sub> Standard



- 4 of the 7 nonattainment areas now meet the standard
- Imperial attains absent impacts from Mexicali
- South Coast expected to attain in 2015
- San Joaquin remains greatest challenge

# Drought Impact on PM2.5 in San Joaquin Valley

- Valley experienced nearly 2 months without rainfall during December 2013/January 2014
- PM2.5 levels exceeded the standard during most of this period
- Valley did not attain annual standard by 2014 attainment date
- District developing revised SIP





# Planning for $12 \mu\text{g}/\text{m}^3$ Annual PM<sub>2.5</sub> Standard

- SIPs due in 2016
- 4 nonattainment areas with unique challenges
  - Calexico impacted by international cross-border transport from Mexico
  - Portola area of Plumas County impacted by woodsmoke from home heating
  - More than half of the South Coast already meets the standard
  - Drought impacts increase challenge in San Joaquin Valley

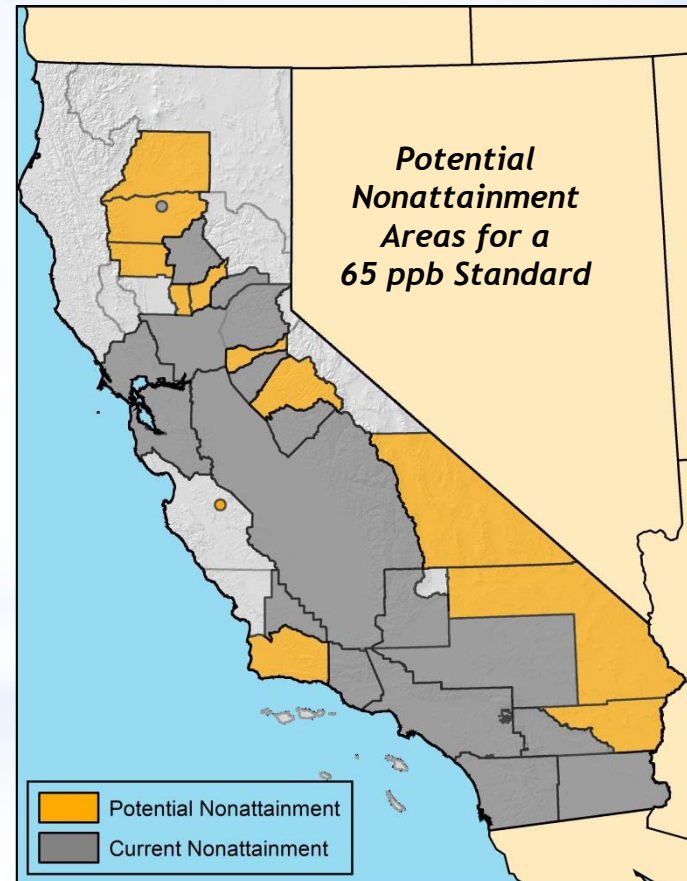
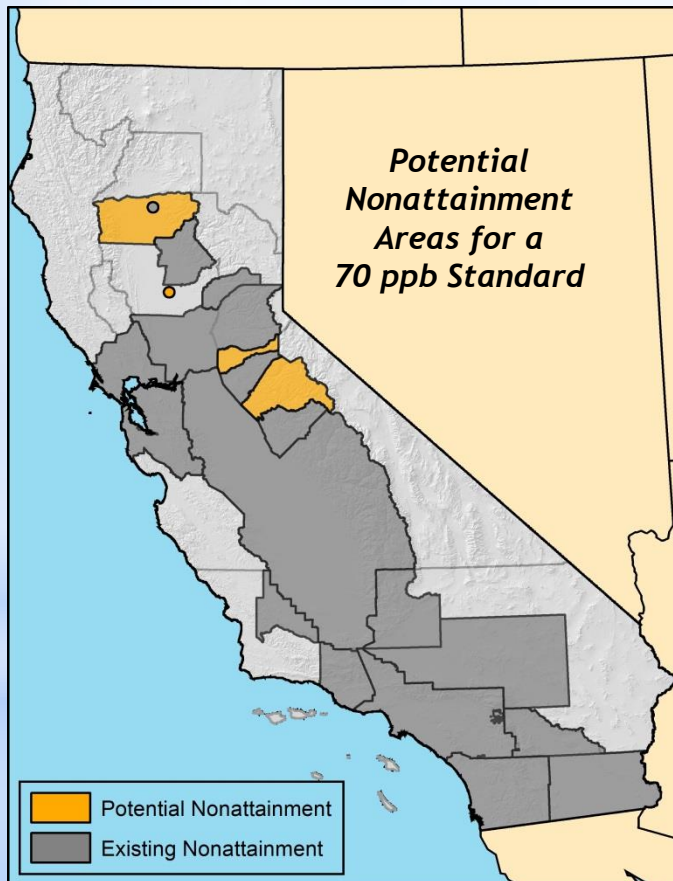


# **U.S. EPA's UPCOMING REVISION TO OZONE STANDARD**

# **Federal Standard Reviews**

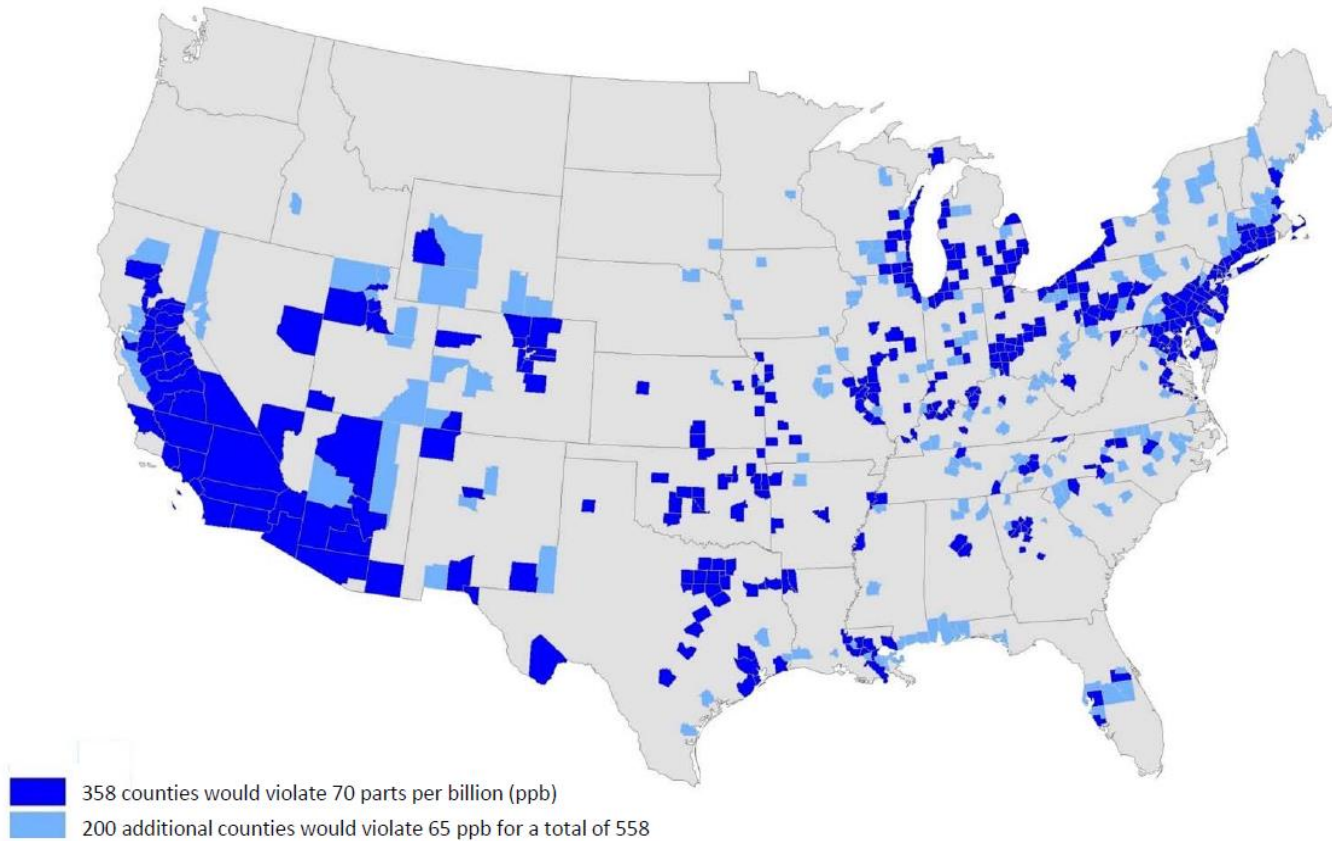
- **Five-year review cycle**
- **U.S. EPA proposed new 8-hour ozone standard in range of 65 ppb to 70 ppb**
- **Public Hearing in Sacramento February 2**
- **Standard will be final October 2015, with plans due in 2020 to 2021 timeframe**
- **Attainment dates range from 2020 to 2037**

# Potential Ozone Nonattainment Areas



# Attainment Status: Ozone

Counties Where Measured Ozone is Above Proposed Range of Standards (65 – 70 parts per billion)



Based on 2011 – 2013 monitoring data

# **SUMMARY**

- **Current strategies for ozone and PM2.5 continue to move California toward attainment**
- **Regional differences will inform focus of needed strategies for new, more stringent standards**
- **Staff will bring ozone and PM2.5 SIPs to Board in 2015 and 2016**